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**Total No. of Pages: 03**  
**Total No. of Questions: 09****B. Tech (Sem.-5<sup>th</sup>)**  
**STRUCTURAL ANALYSIS-II****Subject Code: CE-305****Paper ID: [A0614]****Time: 3 Hrs.****Max. Marks: 60****INSTRUCTIONS TO CANDIDATE:**

1. **Section –A, is Compulsory.**
2. **Attempt any four questions from Section-B.**
3. **Attempt any two questions from Section-C.**

**SECTION –A****(10X2=20)**

Q.1.

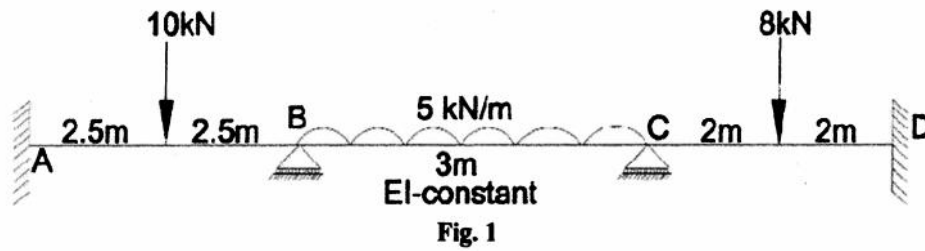
- a) Define indeterminacy
- b) Explain kinematic indeterminacy
- c) Define compatibility in force method of analysis.
- d) Differentiate between force and displacement method of analysis.
- e) Define minimum strain energy theorem.
- f) Explain various assumptions made in portal method of analysis.
- g) Define stiffness
- h) Define Influence line.
- i) Explain reasons behind sway in frames.
- j) Explain space truss.

**SECTION –B****(4X5=20)**

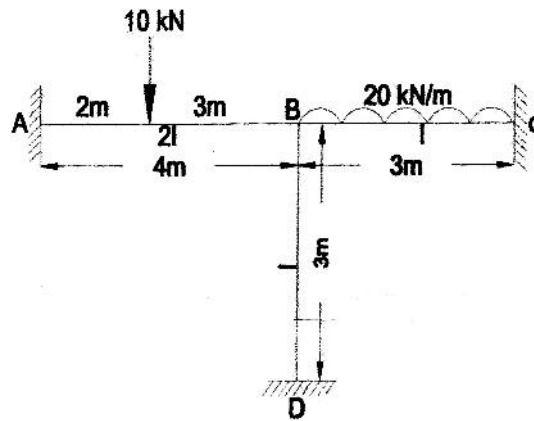
Q.2. Explain Muller Breslau Principle? Using the principle draw influence line diagram for reaction at the propped end, moment at the fixed end for a propped cantilever beam of length L?

Q.3. Differentiate between force and displacement method of analysis?

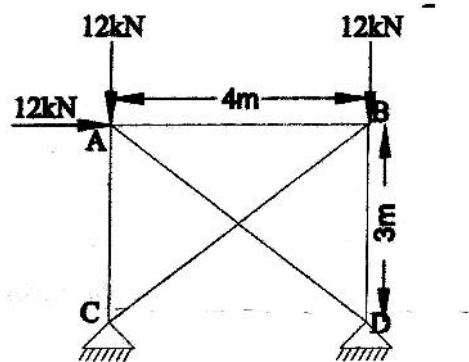
- Q.4. Determine reactions at support and draw B.M.D and S.F.D for the beam loaded and supported as shown in fig.1 using three moment equation method.



- Q.5. Determine the force in all the member of the truss shown in fig.2. AE is constant for all members.



- Q.6. Analyse the rigid jointed frame shown in fig.3 using stiffness method.



(2X10=20)

## SECTION-C

(2x10=20)

- Q.7. Fig.4 show the plan of tripod , the feet A , B and C being in the same horizontal plane and the apex D being 3.75m above the plane. Horizontal loads of 100kN and 150kN are applied at D in the direction shown. find the forces in all the members assuming that all the joints are pin-joints.

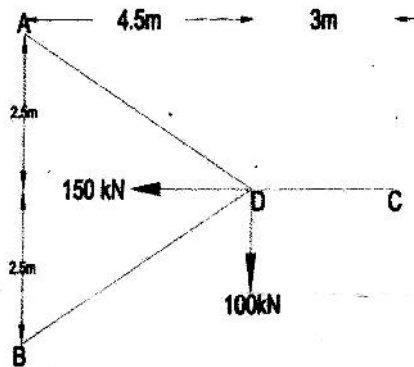


Fig. 4

- Q.8. What do you understand by equilibrium? Explain what are the stability conditions required for space trusses?
- Q.9 Explain in detail different methods for analysis of building frame.

\*\*\*\*\*END\*\*\*\*\*